スポーツ科学研究, 11, 69-130, 2014 年

The relationship muscle hardness and subjective evaluations of the condition before and after sleep

Takahisa Yonezu[1)], Yasuaki Saho[2)], Toru Fukubayashi[3)]
[1)] Graduated School of Sport Sciences, Waseda University
[2)] Department of medical technology, Teikyo University
[3)] Faculty of Sport Sciences, Waseda University

It is often known that muscle hardness increases after exercise, it could be used as the method to evaluate muscle fatigue. However there is no report about the relationship muscle hardness and subjective evaluation of the condition. The aim of this study is to examine the relationship muscle hardness and subjective evaluation of the condition. Eight male college soccer players participated in this study for five weeks. Two different methods were used for the hardness measurement. One was with ultrasonography (EUB-7500, Hatachi Medical, Japan). The other was with push-hit hardness meter (NEUTONE, Try-all, Japan). The measurement sites were vastus medialis (VM), rectus abdominis (RA), and erector spinae muscles (ES). POMS and SF-8 were used as subjective evaluations of the condition. POMS was calculated the difference before bedtime on Tuesday and after wake-up on Wednesday as the first half of the week, on Saturday and on Sunday as the second half of the week. SF-8 was calculated the difference after wake-up on Tuesday and Sunday. Muscle hardness was calculated the difference corresponding span of POMS and SF-8. We calculated Pearson's correlation coefficient between the difference of each muscle hardness and that of POMS or SF-8.The score of fatigue in POMS correlated with VM in the second half of the week. The score of item about physical function correlated with VM.We concluded that there is the relationship between the difference of muscle hardness on VM and the item about physical function concerned with subjective evaluation of the condition.